

# Status Report on CCPI Round 1 Activities

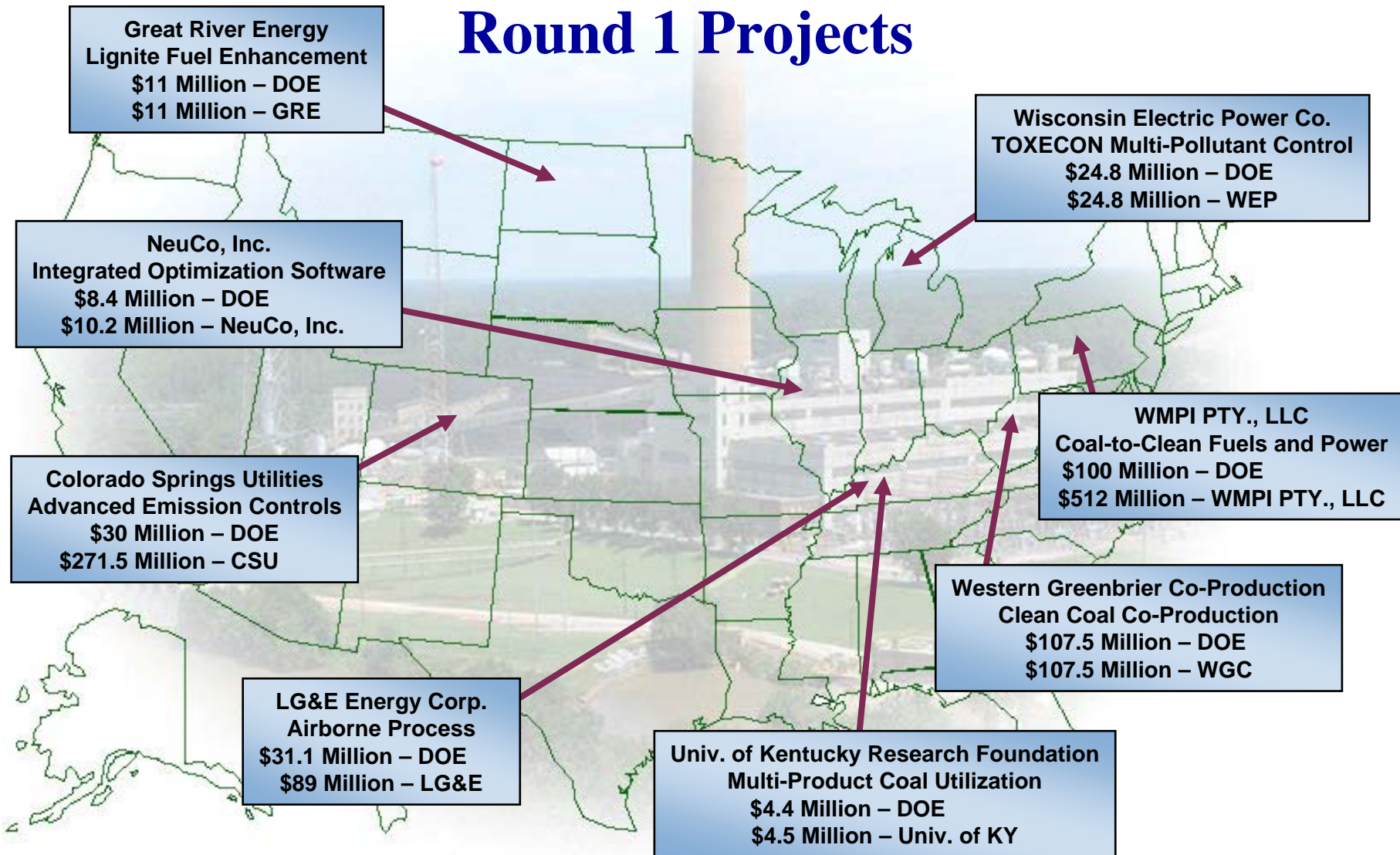
**CCPI Round 2 Planning  
Workshop**

**Pittsburgh, PA  
August 26, 2003**

**Mike Eastman, Technology Manager, NETL**



# Clean Coal Power Initiative (CCPI) – Round 1 Projects



# CCPI Round 1 Project Selections --- *Cost-sharing Summary (\$1,000's)*

<i>Project</i>	<i>DOE</i>	<i>Private</i>	<i>Total</i>	<i>Private/DOE</i>
<b>Colorado Springs Utilities</b>	30,000	271,500	301,500	90/10
<b>LG&amp;E Energy Corp.</b>	31,000	89,000	120,000	74/26
<b>Wisconsin Electric</b>	25,000	25,000	50,000	50/50
<b>Great River Energy</b>	11,000	11,000	22,000	50/50
<b>NeuCo., Inc.</b>	8,000	11,000	19,000	58/42
<b>Univ. of Kentucky</b>	4,500	4,500	9,000	50/50
<b>WMPI</b>	100,000	512,000	612,000	84/16
<b>Western Greenbrier</b>	107,500	107,500	215,000	50/50
<b>Total</b>	<b>317,000</b>	<b>1,031,500</b>	<b>1,348,500</b>	<b>76/24</b>

Figures are rounded



# CCPI Round 1 Project Selections --- *Clear Skies Technologies*

- **Colorado Springs Utilities** --- SO<sub>2</sub>, NO<sub>x</sub> and mercury control on a new 150MW CFB; **\$30M DOE/\$301M total**
- **LG&E Energy Corporation** --- Retrofit advanced SO<sub>2</sub>, NO<sub>x</sub> and mercury Airborne control process on existing 524MW plant; **\$31M DOE/\$120M total**
- **Wisconsin Electric Power Company** --- Retrofit advanced TOXECON mercury control process on existing 270MW plant; **\$25M DOE/\$50M total**



# CCPI Round 1 Project Selections --- *Higher Efficiency Processes*

- **Great River Energy** --- Integrated system using waste heat from a 546MW power plant to reduce moisture of lignite feed coal; **\$11M DOE/\$22M total**
- **NeuCo., Incorporated** --- Use integrated on-line computer control techniques to optimize performance of multiple systems on a 600MW boiler; **\$8M DOE/\$19M total**
- **University of Kentucky Research Foundation** --- Install carbon recovery/ash beneficiation process to reduce plant wastes and produce useful by-products at 2,200MW plant; **\$4.5M DOE/\$9M total**



# CCPI Round 1 Project Selections --- *Clean Energy Technologies*

- **Waste Management and Processors Incorporated ---**  
Build and operate new gasification plant using anthracite wastes to produce electricity, clean liquid fuels and process heat; **\$100M DOE/\$612M total**
- **Western Greenbrier Co-Generation, LLC ---** Build and operate an innovative circulating fluid bed 75MW power plant with advanced multi-pollution control systems using coal refuse to produce electricity and steam for industrial use and district heating; **\$107M DOE/\$215M total**



# CCPI Round 1 Project Selection --- *Activity Summary Status*

- **Project selections announced**
  - Selection announcement Techline issued January 15, 2003
  - Project descriptions and benefits analyses posted on CCPI website [www.netl.doe.gov/coalpower/ccpi](http://www.netl.doe.gov/coalpower/ccpi)
- **Pre-Award activities in progress**
  - Fact-finding, NEPA review, and benefits and repayment analysis underway
  - Pre-Award meeting held with participants in Pittsburgh on February 5, 2003 (70+ attendees), all 8 projects represented
- **Initial awards expected within the next few months**





# Preliminary NEPA Evaluation Results

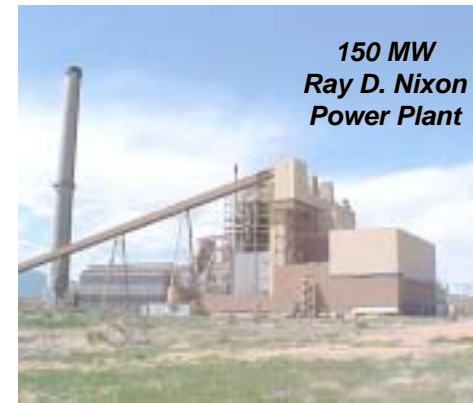
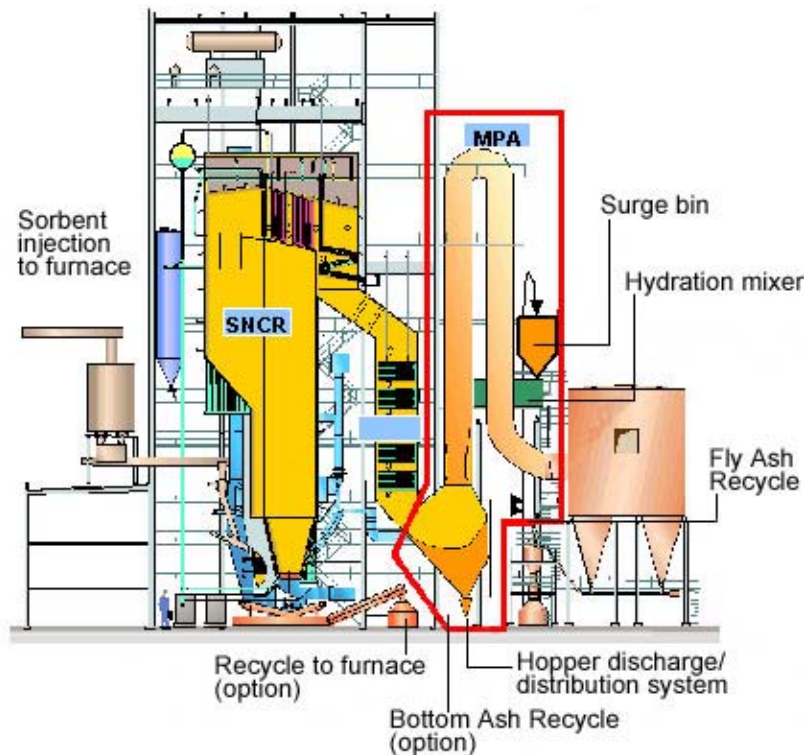
- **Environmental Impact Statements (EIS)**
  - Colorado Springs Utilities
  - Waste Management & Processors, Inc.
  - Western Greenbrier Co-Gen LLC
- **Probable Environmental Assessments (EA)**
  - Great River Energy
  - Louisville Gas & Electric Corporation
  - University of Kentucky Research Foundation
  - Wisconsin Electric Power Company
- **Probable Categorical Exclusion**
  - NeuCo, Inc.





# Colorado Springs Utilities

- One of cleanest coal-fired power plants for SO<sub>x</sub>, NO<sub>x</sub> and Mercury Control in U.S.
- Uses variety of fuels: bituminous, subbituminous, coal wastes, and wood wastes.
- Total Project funding: \$301.5 million (DOE share: \$30 million).



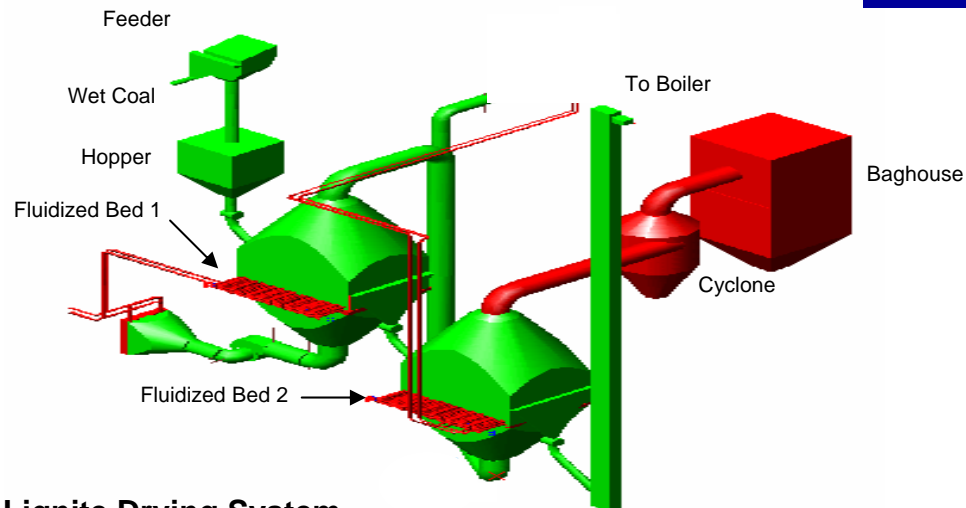
## A CCPI Round 1 Project



# Great River Energy

- Lignite Fuel Enhancement - applicable to power plants burning inherently high-moisture coals.
- A full-scale test on 546 MW unit at Coal Creek Station.
- Total Project funding:  
\$22 million (DOE share: \$11 million).

## Two-Stage Fluidized Bed Dryer System using Waste Heat



Lignite Drying System



Coal Creek Station  
Underwood, ND



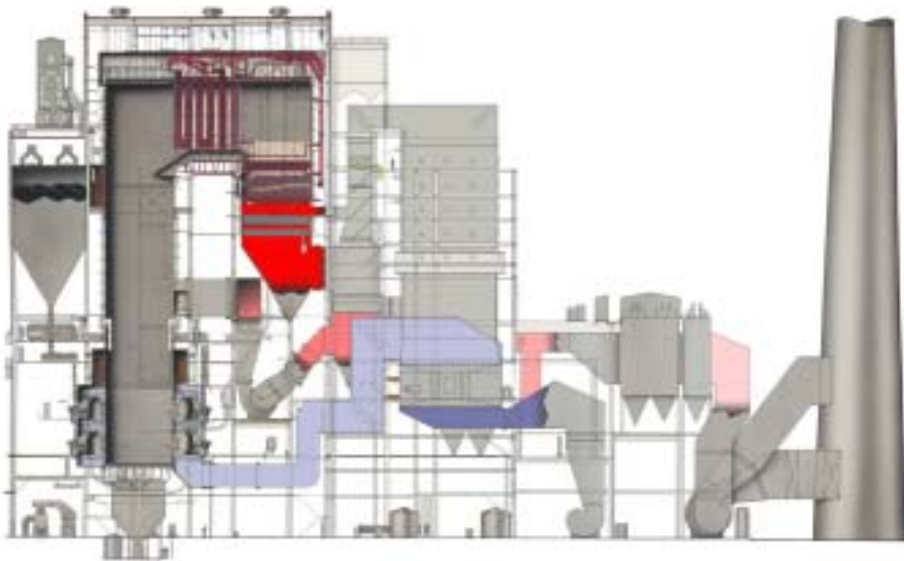
Lignite Coal

## A CCPI Round 1 Project



# NeuCo, Inc.

- Integrated Optimization Software reduces emissions, increases efficiency, and increases reliability.
- Five Optimization Modules: cyclone combustion, sootblowing, SCR operations, thermal performance, and profit optimization.
- Total Project funding: \$18.6 million (DOE share: \$8.4 million).



Dynegy Midwest Generation's Baldwin Energy Complex

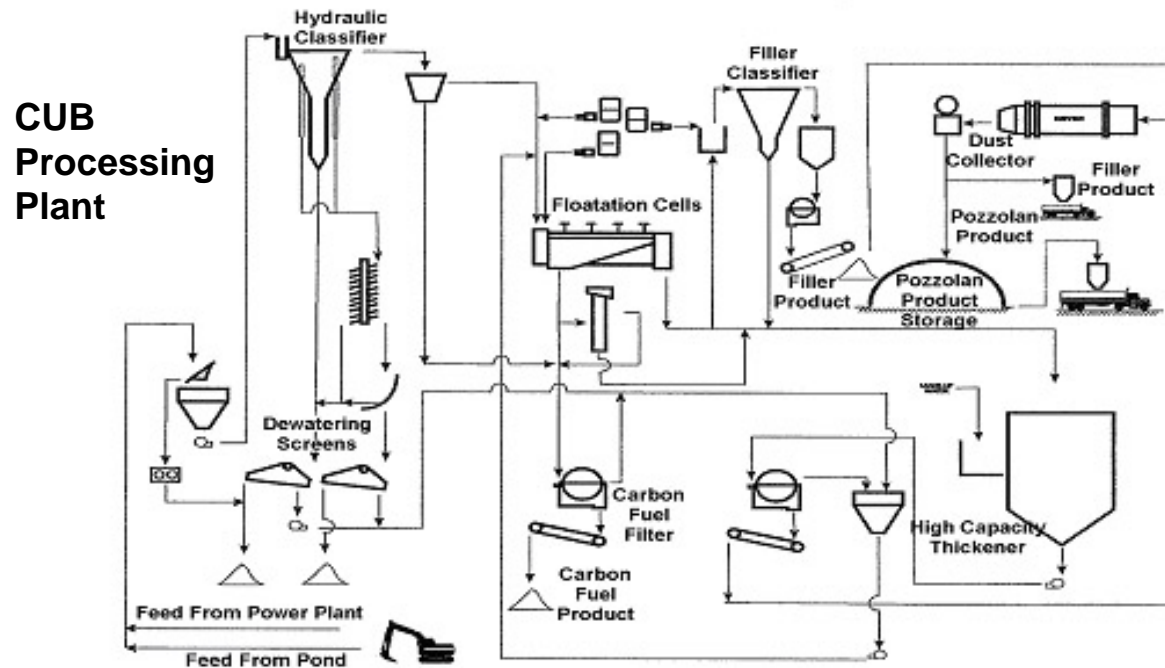


## A CCPI Round 1 Project



# University of Kentucky Research Foundation

- Next Generation Coal Ash Beneficiation Processing Plant addressing entire coal utilization by-product (CUB) stream and producing a variety of value-added products.
- Total Project funding: \$8.9 million (DOE share: \$4.4 million).

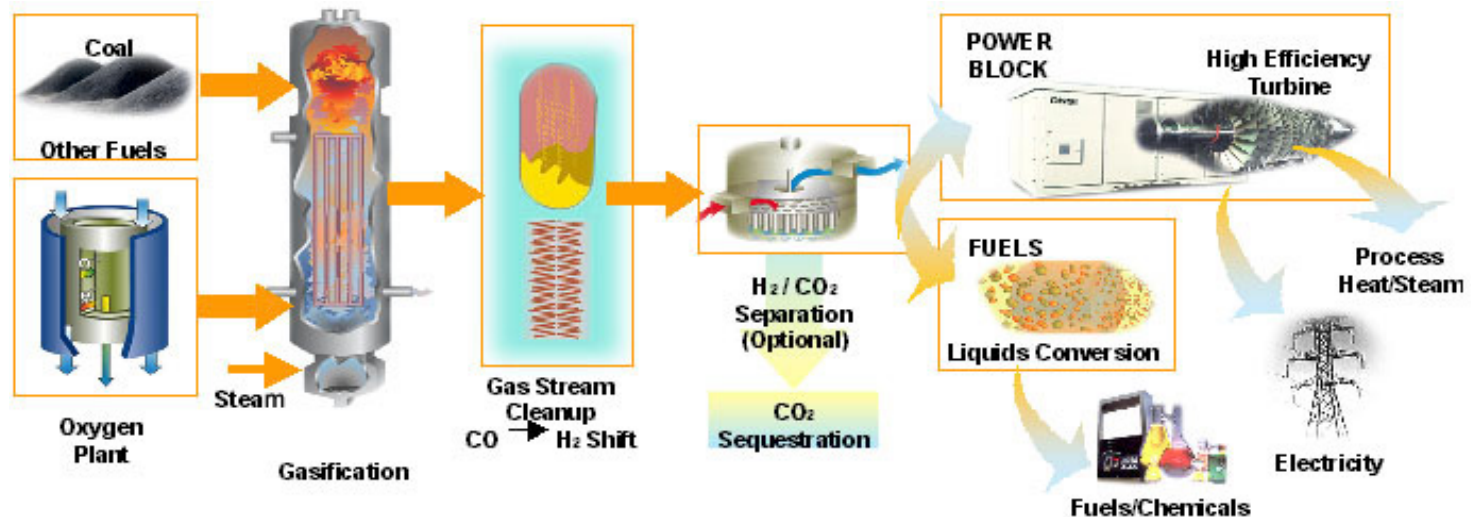


**A CCPI Round 1 Project**



# Waste Management and Processors Inc. (WMPI PTY., LLC)

- First power plant in U.S. gasifying waste coal and low-value resources to produce electrical power, thermal energy, and liquid fuels.
- Project enhances Nation's energy security by producing liquid transportation fuels.
- Total Project funding: \$612 million (DOE share: \$100 million).



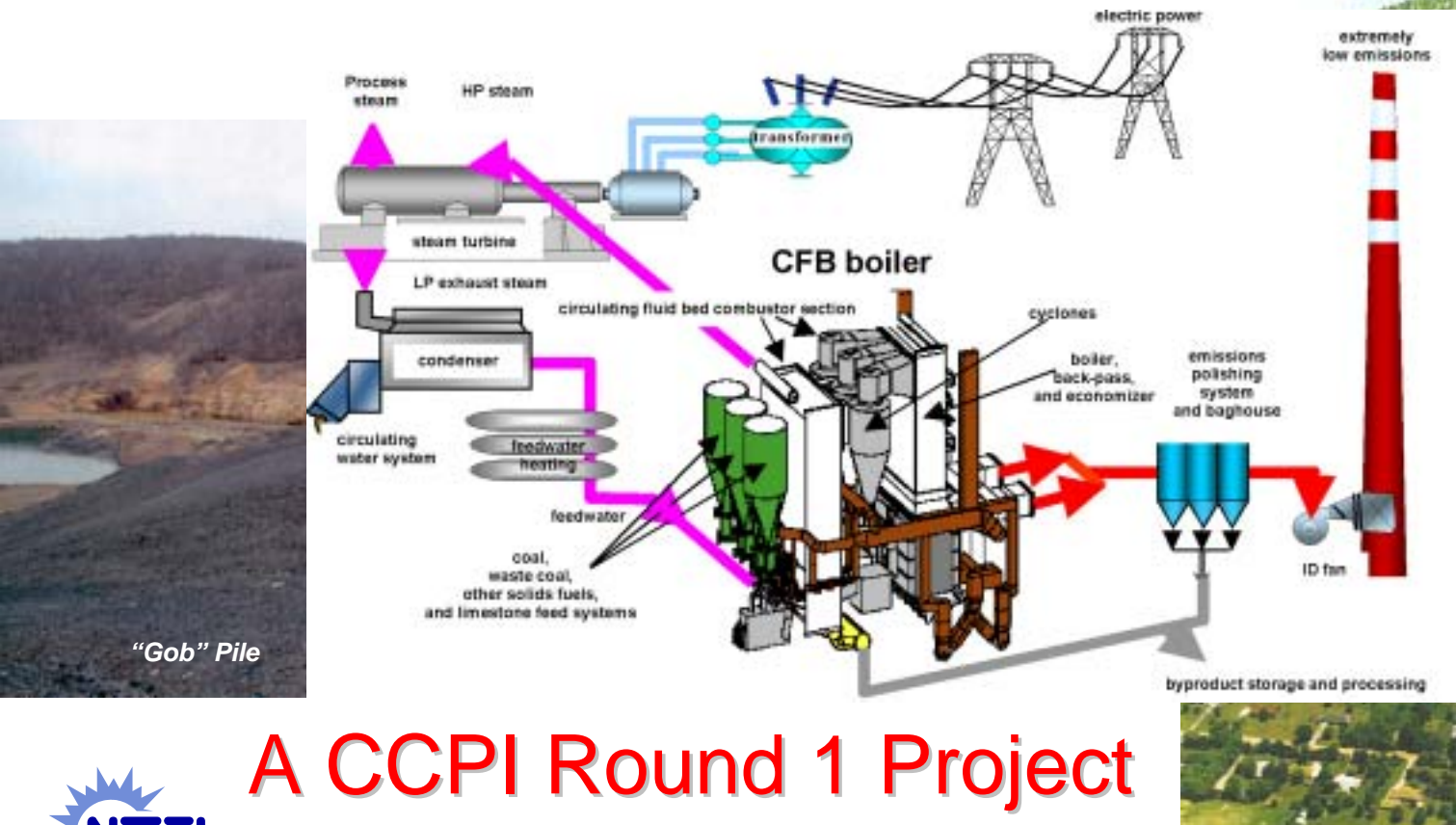
## A CCPI Round 1 Project





# Western Greenbriar Co-Generation, LLC

- Anchor tenant in a proposed environmentally balanced industrial “Eco Park”; remediation model for State/Local Governments.
- 85 MW waste-coal to energy Fluid Bed Combustor.
- Total Project funding: \$215 million (DOE Share: \$107.5 million).

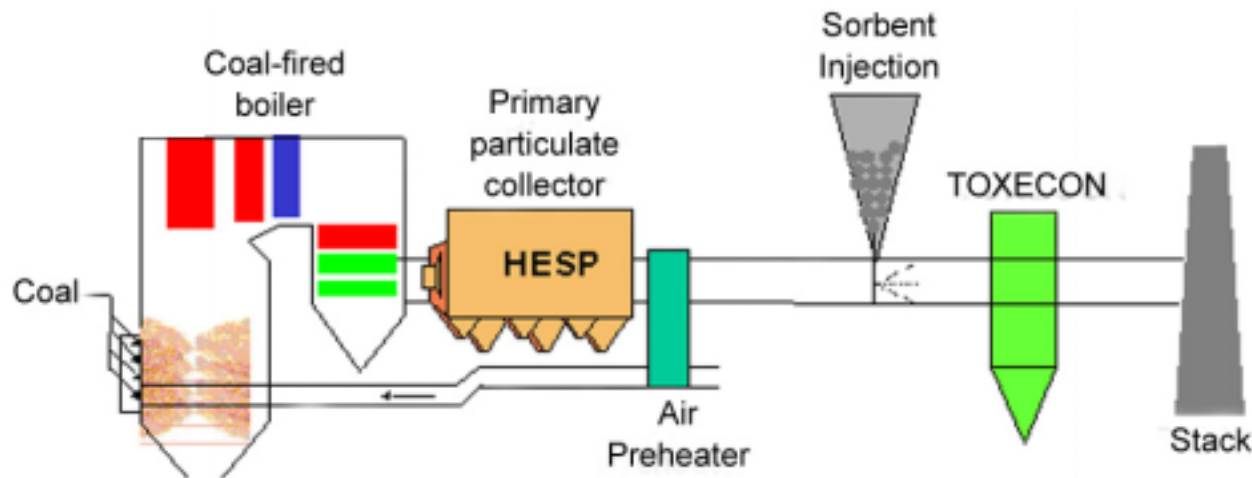


A CCPI Round 1 Project



# Wisconsin Electric Power Company

- An integrated Hg, SO<sub>2</sub>, NO<sub>x</sub>, and particulate emission control approach.
- Maximizes use of coal combustion by-products.
- Provides for timely compliance with future Hg regulations.
- Total Project funding: \$49.5 million (DOE share: \$24.7 million).



**A CCPI Round 1 Project**





Visit Our NETL Website  
[www.netl.doe.gov](http://www.netl.doe.gov)

Visit Our OCES Website  
[www.netl.doe.gov/coalpower/](http://www.netl.doe.gov/coalpower/)  
[www.netl.doe.gov/coalpower/ccpi](http://www.netl.doe.gov/coalpower/ccpi)

**NATIONAL ENERGY TECHNOLOGY LABORATORY**  
 United States Department of Energy

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February 06, 2003

**Energy Statement**  
**TOP NEWS STORIES**

**DOE Names Winners of Clean Coal Competition**  
**\$1.3 Billion of Projects Aimed at Clear Skies, Climate Change & Coal Waste Cleanup**  
 The Department of Energy has named the first winners in President Bush's **Clean Coal Power Initiative**. The eight projects are valued at more than \$1.3 billion and include new technologies to reduce air pollutants, boost power plant efficiencies, and extract energy from coal waste piles. [Read More!](#)

**Experimental Fiber Optic Cables To Warn of Potential Pipeline Damage**  
**Tests Begin of an "Early Warning" System To Prevent Damage to Natural Gas Pipelines**  
 Technicians in a joint DOE-industry project have deployed fiber optic cables over a mile of an active gas pipeline in the first test of a new system to detect encroaching construction activity. [Read More!](#)

**Gas Upgrading R&D "Success Story"**  
 A new gas upgrading technology funded by DOE and the Gas Technology Institute moves to market. [Link To G.T.I. Announcement](#)

**NEW! DOE AWARDS NEW CONTRACTS TO IMPROVE POWER PLANTS BY:**

**Recycling Coal Combustion Ash**  
 A cooperative agreement with Universal Aggregates, LLC calls for a manufacturing plant at the Birchwood Power Facility in King George, Virginia, to turn coal ash into aggregate. [Read More!](#)

**Integrating Lower-Cost NOx Controls**  
 A unique combination of high-tech combustion modifications and sophisticated control systems will be tested on a Kansas coal plant to show how new technology can reduce air emissions and save money. [Read More!](#)

**BUSINESS SECTORS**

- Strategic Center for Natural Gas
- Coal and Env. Systems
- Climate Change Policy Support
- National Petroleum Technology Office
- Env. Technologies & Business Excellence
- Homeland Security Energy Infrastructure

**Visit the Homeland Security Energy Infrastructure Website!**

**SPECIAL ANNOUNCEMENTS**

- [Powder River Coal Can Be Rich Source of Natural Gas](#) [PDF]
- [Abraham Announces Plans to Expand Sequestration Program](#)
  - [Regional Carbon Sequestration Partnerships Solicitation](#)

**NATIONAL ENERGY TECHNOLOGY LABORATORY**  
 OFFICE OF COAL & ENVIRONMENTAL SYSTEMS

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**Office of Coal & Environmental Systems**

Welcome to NETL's **Office of Coal and Environmental Systems** webpage. From promoting gasification and combustion technologies, to funding and fostering carbon sequestration and advanced research, we take the steps necessary to ensure coal is sustained as a clean and affordable energy supply.

Through this website, we hope to answer your questions about using coal as a reliable, stable, and sustainable source for electric power. We will share with you the technologies in place now to make this a reality, and the planning, funding, and development efforts to make tomorrow's technologies a reality, today.

[Tracking New Coal-Fired Power Plants](#) (PDF-445KB)

**Vision 21**

Advanced Research  
 Carbon Sequestration  
 Clean Coal Power Initiative (CCPI)  
 Combustion Technologies  
 Environmental & Water Resources  
 Gasification Technologies  
 Mining Industry of the Future  
 Vision 21

**BUSINESS SECTORS**

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